

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks. Currently, claims 1-46 are pending in the present application of which claims 1, 9, 16, 24, 31, and 39 are independent.

Information Disclosure Statement

Applicant notes that the Examiner has considered each reference filed in the 5/27/2009 IDS except for the non-patent reference entitled "The CDMA 2000 ITU-R RTT Candidate Submission 0, 19 Online 27 July 1998" because a copy of this reference was not attached to the IDS. Applicant directs the Examiner to the IDS filed concurrently with this Amendment, and submits that a copy of the above-noted reference has been attached to this IDS. Accordingly, Applicant respectfully requests that the Examiner consider the above-noted reference.

Claim Rejection Under 35 U.S.C. §101

Claims 1-15, 47 and 48 were rejected under 35 U.S.C. §101 for allegedly being directed to non-statutory subject matter for being processes that are not tied to another statutory category of invention. By the present Amendment, independent claims 1 and 9 have been amended such that their respective processes are more directly tied to an apparatus (i.e., a "transmitter"). This Amendment is supported at least by step 410 of FIG. 4 and/or transmitter 300 of FIG. 3.

Accordingly, Applicant respectfully requests that the Examiner withdraw this rejection.

Claim Rejection Under 35 U.S.C. §103(a) – Berruto in view of Shiobara

Claims 1, 2, 5, 9-11, 14, 16, 17, 20, 24-26, 31, 32, 35, 39, 40 and 43 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Berruto (EP 0 627 827) in view of Shiobara (U.S. Patent Number 5,535,214). Applicant respectfully traverses these art grounds of rejection.

1. Discussion of Berruto.

Berruto indicates “for each physical channel a maximum transmission rate is foreseen, which can vary depending on the system conditions” (e.g., see Page 1, lines 10-34 of Berruto). Berruto is directed to dividing up ‘slices’ of the maximum transmission rate of the physical channel dynamically and allocating these slices to different streams based in part on an expected data rate requirement for the different streams (e.g., see Page 1, lines 45-59 of Berruto).

Berruto discloses that a control unit UC (shown in FIG. 2 of Berruto) attempts to figure out a rate requirement for different information streams associated with a plurality of mobile stations $M_1 \dots M_h$ (e.g., see Page 3, lines 34-51 of Berruto). For example, Berruto states that “a source CS1 of control signals issuing on a connection 2 a stream at a rate r_2 ”, etc. (e.g., see Page 3, lines 43-45 of Berruto). The control unit UC (or UC1) aggregates all of this information for the different streams so as to determine “rates $r_1 \dots r_4$ so as to satisfy entirely the rate and protection requirements of the different streams” (e.g., see Page 4, lines 34-36 of Berruto). Basically, if the aggregate rate requirement is less than the maximum transmission rate, the rates are simply allocated to the individual mobile stations “”. However, if the aggregate rate requirement exceeds the maximum transmission rate (or system rate r_5), the control unit UC1

must make sacrifices, or reduce some of the rates, "so as to minimize the total cost which must be paid to obtain a predetermined quality" (e.g., see Page 4, lines 35-37 of Berruto, also see Page 7, line 41, "If the total rate required exceeds system rate r_s , it is necessary to pass on to cost evaluation").

With regard to the nature of what types of costs are considered by the control unit, Berruto states that "[t]hese costs in the described embodiment are digital values which give, for instance, an indication of the distortion associated with a certain rate of the coded signal (for speech) or with certain conditions of the channel or the system, or of the time required for the execution of a procedure (for control signals)" (e.g., Page 4, line 38-40 of Berruto, Emphasis added). More specifically, Berruto gives examples of these two different types of costs as "[c]osts C1 can for example express a measure of the perceptual distortion associated with a particular combination requested rate - allocable rate" and "[c]osts C2 can be the expression of the quality of service represented e.g. as the time for the execution of a procedure and therefore as the probability that the procedure itself could be completed in a preset time" (e.g., see Page 5, lines 44-50 of Berruto).

Accordingly, in evaluating a proposed set of rates for the information streams, there are costs (C1) related to the quality of service that can be obtained and also costs (C2) related somewhat to how long it will take to transmit the data on the individual streams. Essentially, this means different combinations of lower rates for the different streams are evaluated and the lowest-cost combination that has a total rate consumption less than the system rate (or maximum transmission rate) is selected (e.g., see Page 7, lines 41-51 of Berruto).

2. Deficiencies of Berruto.

The Examiner indicates that the limitation of “determining a data rate for transmission of the packets of data based on the arrangement of said packets of data in said queue allowing for meeting the transmission deadline for each of said packets of data” as recited in independent claim 1, and similarly recited in independent claims 9, 16, 24, 31, and 39, is disclosed by Berruto at Paragraphs [0012], [0020], [0023] and [0032]. The Examiner appears to suggest that with Berruto discloses that the data rates are calculated so as to reduce costs, and that this cost-reduction process corresponds to a “transmission deadline”. As best as Applicant can understand, it appears that the Examiner is suggesting that because the rates allocated to the streams affect how fast these streams can transmit data, and because costs C2 attempt to factor in a penalty for a particular rate being too slow, that the rates selected for the streams are based on the data requirements of the individual streams.

However, as described in the preceding section, the costs C2 are related to the probability of whether the allocated rate to the stream is sufficient for a given amount of data to be transmitted in a given amount of time. This is clearly not the same as determining a data rate for transmission “based on the arrangement of said packets of data in said queue” as recited in independent claim 1, for example. In other words, Berruto tries to broadly determine whether an allocated rate is sufficient to complete a data transmission operation in a given amount of time, but Berruto does not appreciate the relevance of analyzing the actual arrangement, or order, of the data to be transmitted. The arrangement or order of the data to be transmitted on any of the information streams in Berruto is clearly not a factor that is used in the cost-evaluation process when the control unit tries to determine an acceptable rate allocation.

3. Shiobara does not cure the deficiencies of Berruto.

Shiobara is directed a manner of handling transmission/reception requests based on an 'urgency' of the associated request. In Shiobara, transmission/reception requests are ranked or prioritized in a transmission queue based on a current margin-time associated with each transmission/reception request. The queue is updated as necessary when requests are added to the queue based on the associated margin-time of the new request(s) (e.g., see Col. 6, lines 16-26 of Shiobara). These margin-time queues are maintained separately at a number of different stations, and the lowest margin-time (i.e., the most urgent request) from any of the stations is always the next request to be processed by the system (e.g., see Col. 6, lines 30-42 of Shiobara). In other words, "[t]he given station does not transmit until the urgency of its transmission request becomes higher than that of each of the transmission requests of the remaining stations" (e.g., see Col. 6, lines 50-53 of Shiobara).

Clearly, Shiobara does its best to process these requests, starting with the most-urgent request and eventually handling the requests of less urgency. However, Shiobara does not disclose or suggest modifying the actual rate of transmission so as to avoid a scenario where the margin-times for any of the requests becomes less than zero, which would mean the request is 'past due'. For this reason, Shiobara cannot cure Berruto's failure to disclose or suggest "determining a data rate for transmission of the packets of data based on the arrangement of said packets of data in said queue allowing for meeting the transmission deadline for each of said packets of data" as recited in independent claim 1 and similarly recited in independent claims 9, 16, 24, 31, and 39.

As such, claims 2, 5, 10-11, 14, 16, 17, 20, 25-26, 32, 35, 40 and 43, dependent upon independent claims 1, 9, 16, 24, 31, and 39, respectively, are likewise allowable over the combination of Berruto in view of Shiobara at least for the reasons given above with respect to the independent claims.

Applicant respectfully requests that the Examiner withdraw these art grounds of rejection.

Claim Rejection Under 35 U.S.C. §103(a) – Berruto in view of Shiobara in view of Sherman

Claims 3, 4, 12, 13, 18, 19, 27-29, 33, 34, 41 and 42 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Berruto (EP 0 627 827) in view of Shiobara (U.S. Patent Number 5,535,214) in further view of Sherman (U.S. Publication No. 2003/0161340). Applicant respectfully traverses these art grounds of rejection.

Applicant agrees with the Examiner with regard to deficiencies present within Berruto and Shiobara with respect to the claim limitations present in dependent claims 3, 4, 12, 13, 18, 19, 27-29, 33, 34, 41 and 42. However, the Examiner now cites to Sherman and alleges that Sherman cures these particular deficiencies. Sherman is directed to a method and system for optimally serving stations on wireless LANS using a controlled contention/resource reservation protocol of the IEEE 802.11E standard. Even assuming for the moment that Sherman disclosed the particular claim limitations absent from Berruto and Shiobara specific to the above-noted dependent claims (which Applicant does not admit), Applicant respectfully submits that a review of Sherman indicates that Sherman is insufficient to cure the suggestion and disclosure deficiencies of Berruto and Shiobara as described above with respect to independent claims 1, 9, 16, 24, 31, and 39.

As such, claims 3, 4, 12, 13, 18, 19, 27-29, 33, 34, 41 and 42, dependent upon independent claims 1, 9, 16, 24, 31, and 39, respectively, are likewise allowable over the combination of Berruto in view of Shiobara in view of Sherman at least for the reasons given above with respect to the independent claims.

Applicant respectfully requests that the Examiner withdraw these art grounds of rejection.

**Claim Rejection Under 35 U.S.C. §103(a) – Berruto in view of Shiobara in view of
Vadgama**

Claims 6, 15, 21, 30, 36 and 44 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Berruto (EP 0 627 827) in view of Shiobara (U.S. Patent Number 5,535,214) in further view of Vadgama (U.S. Publication No. 2003/0083069). Applicant respectfully traverses these art grounds of rejection.

Applicant agrees with the Examiner with regard to deficiencies present within Berruto and Shiobara with respect to the claim limitations present in dependent claims 6, 15, 21, 30, 36 and 44. However, the Examiner now cites to Vadgama and alleges that Vadgama cures these particular deficiencies. Vadgama is directed to cell selection techniques in a cellular communications system. Even assuming for the moment that Vadgama disclosed the particular claim limitations absent from Berruto and Shiobara specific to the above-noted dependent claims (which Applicant does not admit), Applicant respectfully submits that a review of Vadgama indicates that Vadgama is insufficient to cure the suggestion and disclosure deficiencies of Berruto and Shiobara as described above with respect to independent claims 1, 9, 16, 24, 31, and 39.

As such, claims 6, 15, 21, 30, 36 and 44, dependent upon independent claims 1, 9, 16, 24, 31, and 39, respectively, are likewise allowable over the combination of Berruto in view of Shiobara in view of Vadgama at least for the reasons given above with respect to the independent claims.

Applicant respectfully requests that the Examiner withdraw these art grounds of rejection.

**Claim Rejection Under 35 U.S.C. §103(a) – Berruto in view of Shiobara in view of
Vadgama in view of Holden**

Claims 7, 22, 37 and 45 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Berruto (EP 0 627 827) in view of Shiobara (U.S. Patent Number 5,535,214) in further view of Vadgama (U.S. Publication No. 2003/0083069) in view of Holden (U.S. Patent Number 6,134,218). Applicant respectfully traverses these art grounds of rejection.

Applicant agrees with the Examiner with regard to deficiencies present within Berruto, Shiobara and Vadgama with respect to the claim limitations present in dependent claims 7, 22, 37 and 45. However, the Examiner now cites to Holden and alleges that Holden cures these particular deficiencies. Holden is directed to a many dimensional congestion detection system and method. Even assuming for the moment that Holden disclosed the particular claim limitations absent from Berruto, Shiobara and Vadgama specific to the above-noted dependent claims (which Applicant does not admit), Applicant respectfully submits that a review of Holden indicates that Holden is insufficient to cure the suggestion and disclosure deficiencies of Berruto, Shiobara and Vadgama as described above with respect to independent claims 1, 9, 16, 24, 31, and 39.

As such, claims 7, 22, 37 and 45, dependent upon independent claims 1, 9, 16, 24, 31, and 39, respectively, are likewise allowable over the combination of Berruto in view of Shiobara in view of Vadgama in view of Holden at least for the reasons given above with respect to the independent claims.

Applicant respectfully requests that the Examiner withdraw these art grounds of rejection.

**Claim Rejection Under 35 U.S.C. §103(a) – Berruto in view of Shiobara in view of
Vadgama in view of Holden in view of Sherman**

Claims 8, 23, 38 and 46 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Berruto (EP 0 627 827) in view of Shiobara (U.S. Patent Number 5,535,214) in further view of Vadgama (U.S. Publication No. 2003/0083069) in view of Holden (U.S. Patent Number 6,134,218) in view of Sherman (U.S. Publication No. 2003/0161340). Applicant respectfully traverses these art grounds of rejection.

Applicant agrees with the Examiner with regard to deficiencies present within Berruto, Shiobara, Vadgama and Holden with respect to the claim limitations present in dependent claims 8, 23, 38 and 46. However, the Examiner now cites to Sherman and alleges that Sherman cures these particular deficiencies. Sherman is directed to a method and system for optimally serving stations on wireless LANS using a controlled contention/resource reservation protocol of the IEEE 802.11E standard. Even assuming for the moment that Sherman disclosed the particular claim limitations absent from Berruto, Shiobara, Vadgama and Holden specific to the above-noted dependent claims (which Applicant does not admit), Applicant respectfully submits that a review of Sherman indicates that Sherman is insufficient to cure the suggestion and disclosure

deficiencies of Berruto, Shiobara, Vadgama and Sherman as described above with respect to independent claims 1, 9, 16, 24, 31, and 39.

As such, claims 8, 23, 38 and 46, dependent upon independent claims 1, 9, 16, 24, 31, and 39, respectively, are likewise allowable over the combination of Berruto in view of Shiobara in view of Vadgama in view of Holden in view of Sherman at least for the reasons given above with respect to the independent claims.

Applicant respectfully requests that the Examiner withdraw these art grounds of rejection.

Claim Rejection Under 35 U.S.C. §103(a) – Berruto in view of Shiobara in view of Bantz

Claims 47 and 48 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Berruto (EP 0 627 827) in view of Shiobara (U.S. Patent Number 5,535,214) in further view of Vadgama (U.S. Publication No. 2003/0083069). Applicant respectfully traverses these art grounds of rejection.

Applicant agrees with the Examiner with regard to deficiencies present within Berruto and Shiobara with respect to the claim limitations present in dependent claims 47 and 48. However, the Examiner now cites to Bantz and alleges that Bantz cures these particular deficiencies. Bantz is directed to a frequency hopping pattern assignment and control in multiple autonomous collocated radio networks. Even assuming for the moment that Bantz disclosed the particular claim limitations absent from Berruto and Shiobara specific to the above-noted dependent claims (which Applicant does not admit), Applicant respectfully submits that a review of Bantz indicates that Bantz is insufficient to cure the suggestion and disclosure deficiencies of Berruto and Shiobara as described above with respect to independent claim 1.

As such, claims 47 and 48, dependent upon independent claim 1, are likewise allowable over the combination of Berruto in view of Shiobara in view of Bantz at least for the reasons given above with respect to the independent claims.

Applicant respectfully requests that the Examiner withdraw these art grounds of rejection.

Reconsideration and issuance of the present application is respectfully requested.

Conclusion

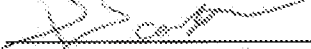
In light of the foregoing, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

While we believe that the instant amendment places the application in condition for allowance, should the Examiner have any further comments or suggestions, it is respectfully requested that the Examiner telephone the undersigned attorney in order to expeditiously resolve any outstanding issues.

In the event that the fees submitted prove to be insufficient in connection with the filing of this paper, please charge our Deposit Account Number 17-0026 and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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